

AMENDMENTS TO THE CLAIMS

1-13. (canceled)

14. (currently amended) An apparatus for producing a compact microarray, comprising:

a printhead having a plurality of pins movably mounted therein, said pins being arranged in subsets of two or more pins; and

a plurality of pin lifting mechanisms, each pin lifting mechanism of the plurality of pin lifting mechanisms associated with a different one of said subsets, [[and]] each pin lifting mechanism configured to lift the pins of the subset upward together relative to the printhead when the pin lifting mechanism is actuated, and configured to release the pins of the subset downward together relative to the printhead when the pin lifting mechanism is disengaged following actuation.

15. (original) The apparatus of Claim 14 wherein said printhead comprises a member having a plurality of through holes extending therethrough, and wherein each pin is slidingly mounted in one of said through holes.

16. (original) The apparatus of Claim 14 wherein said pin lifting mechanisms each include an electromagnet.

17. (original) The apparatus of Claim 14 wherein said pin lifting mechanisms each include a pneumatic actuator.

18. (original) The apparatus of Claim 14 wherein said pin lifting mechanisms each include a support for supporting pins and an actuator for lifting said support.

19. (original) The apparatus of Claim 14 wherein said pin lifting mechanisms each raise pins using suction.

20. (original) The apparatus of Claim 14 wherein a subset comprises a row of pins.

21. (original) The apparatus of Claim 14 wherein a subset comprises a generally rectangular array of pins.

22. (previously presented) The apparatus of Claim 14, wherein each pin lifting mechanism of the plurality of pin lifting mechanisms is sized to cover a different one of said subsets of two or more pins.

23. (previously presented) The apparatus of Claim 14, wherein each pin lifting mechanism of the plurality of pin lifting mechanisms is coupled to a different one of said subsets of two or more pins.

24. (new) The apparatus of Claim 14, wherein the pins drop downward to contact the printhead when released.

25. (new) The apparatus of Claim 24, wherein the printhead comprises a resilient material sized and positioned to cushion the pins of the subset when the pins drop downward to contact the printhead when released.

26. (new) The apparatus of Claim 16, wherein the electromagnet generates an electromagnetic force that attracts the pins of the subset across an air gap when actuated by applying an electrical current, and wherein the electromagnet releases the pins of the subset when disengaged by removing the electrical current following actuation.